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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,629

05/18/2004

Kazumichi MACHIDA

040184

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7590

02/24/2006

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
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WASHINGTON, DC 20006

EXAMINER

CHAN, EMILY Y

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/709,629

Applicant(s)

MACHIDA ET AL.

Examiner

Emily Y. Chan

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/29/05; 2/10/06</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamaru et al US Patent No.6,496,023 in view of Hasegawa US Patent No. 6,657,448.

With respect to claim 1, Kanamaru et al (023) disclose a probe sheet unit (see Figs 2 and 16A and 16B) being a sensing section of a Semiconductor wafer measuring instrument (fig. 2) comprising;

a base plate (probe forming board 4) mountable to a prober of the instrument (wafer inspection apparatus);

a sheet member (see Fig. 16A, "sheet material 29") mounted to the base plate (probe forming board 4) and is elastically deformable in response to a force (pressing jig 28) acting thereon through the respective measurement probes (6) for varying proximity therefrom to the base plate (probe forming board 4) (see Fig. 16 B and page 7, paragraph (0084) ); and

plural measurement probes (6).

Kanamaru et al ('023) fail to disclose that the plural measurement probes (6) are elastically deformable respectively in response to a force acting on the top thereof for varying proximity from the top of the probe to the sheet member (29).

Hasegawa ('448) discloses a probe sheet (see Figs. 1 and 4 ) comprising: a sheet member (elastic member 18) and plural measurement probes (42) provided on one surface of the sheet member (18). Hasegawa ('448) exclusively teaches that each of the probes (42) is elastically deformed by the overdrive of the projection electrode (see Col. 9, lines 21-23). Furthermore, Hasegawa ('448) specifically teaches the added feature that a proximity to the sheet member is variable in order to absorb and accommodate a plurality of dispersion in height of electrodes of a measurement object (see Col. 9, lines 25-30, "if the projection electrodes 40 are a little different from each other in their height, such height difference is absorbed by the elastic deformation of the probe element 42 and the elastic member 18 as well").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate the sheet member and the elastically deformable probe of Hasegawa ('448) into Kanamaru et al ('023)'s probe sheet unit for the expected benefit of absorbing the different height of the projection electrodes and obtaining sure electrical contact as disclosed by Hasegawa ('448) (see Col. 9, lines 28-30).

With respect to claim 2, Kanamaru et al ('023) disclose wiring patterns formed inside and/or on a surface of the sheet member (29) and an external electrode

connected electrically to the probes (6) through the wiring patterns provided on the surface of the sheet member (see Fig. 2).

With respect to claim 3, Kanamaru et al ('023)'s circuit elements are provided inside and/or on a surface of the sheet member (29) and the circuit elements are connected electrically to the wiring patterns (see Fig. 2, circuit element and wiring pattern connection).

With respect to claim 6, Hasegawa ('448) discloses that his sheet member (elastic member 18) is made of silicone rubber material (see Col. 7, lines 55-56), which would inherently meet the claimed material with a linear expansion coefficient in a range of from 2.5 to 10.5 ppm/oC.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamaru et al ('023) in view of Hasegawa ('448) as applied to claims 1-3 above, and further in view of Takayama et al US Patent No. 5,977,783.

Kanamaru et al ('023) in view of Hasegawa ('448) do not disclose that their probe is curved and a reinforcing member with an elasticity higher than the probe is provided.

Takayama et al ('783) disclose a multiplayer probe (2) (see Fig. 1) and exclusively teach that the multiplayer probe (2) is curved (see Figs 2-5) and there is a reinforcing member (2b) with an elasticity higher than the multiplayer probe (2) is provided integrally with multiplayer the probe (2) on a surface thereof along the length direction (see Col. 3, lines 10-14 and Col. 6, lines 42-44).

member of Takayama et al ('783) into Kanamaru et al ('023) in view of Hasegawa ('448) 's probe sheet device for the expected benefit of providing a highly reliable electrical testing as disclosed by Takayama et al ('783) (see Abstract, last line).

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamaru et al ('023) in view of Hasegawa ('448) as applied to claims 1-3 above, and further in view of Jitsumori et al US Patent No. 6,232,791.

Kanamaru et al ('023) in view of Hasegawa ('448) do not disclose that their probe is curved and a reinforcing member with an elasticity higher than the probe is provided on the surface of the sheet member for claim 5 and also do not disclose an elastic member interposed between the base plate and the probe sheet member for claim 7.

Jitsumori et al ('791) disclose a probing apparatus (see Fig. 1b) and exclusively teach a probe (14) that is curved, a sheet member ("elastic sheet 13") and a reinforcing member ("elastic member 11") with an elasticity higher than the probe (14) for claim 5 and also disclose an elastic member (11) interposed between the base plate (10) and the probe sheet member (13) for claim 7 (see Col. 5, lines 38-39).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate the curved probes and the reinforcing member of Jitsumori et al ('791) into Kanamaru et al ('023) in view of Hasegawa ('448) 's probe sheet device for the expected benefit of providing more reliable electric connections between the probe terminals and the testing electrodes because Jitsumori et al ('791) disclose that the "elastic member accommodates variations in the distance between the board and each of the probe terminals" (see Col. 5, lines 42-44).

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

***Response to Amendment***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EC  
2/18/05

  
VINH NGUYEN  
PRIMARY EXAMINER  
A-u-2829  
02/21/06